

REMARKS

The present application was filed on November 10, 1999 with claims 1-20. New claims 21-29 were added in an Amendment dated September 30, 2003. In the outstanding final Office Action, the Examiner: (i) reiterated the rejection of claims 1, 5-7, 15, 19 and 20 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,649,060 to Ellozy et al. (hereinafter "Ellozy"); (ii) reiterated the rejection of claims 2-4 under 35 U.S.C. § 103(a) as being unpatentable over Ellozy, and further in view of the Background of the Invention.; (iii) reiterated the rejection of claims 10-13 under 35 U.S.C. § 103(a) as being patentable over Ellozy in view of U.S. Patent No. 5,778,361 to Nanjo et al. (hereinafter "Nanjo"); (iv) reiterated the rejection of claims 8 and 9 under 35 U.S.C. 103(a) as being unpatentable over Ellozy in view of U.S. Patent No. 5,794,249 to Orsolini et al, (hereinafter "Orsolini"); and (v) reiterated the rejection of claim 13 under 35 U.S.C. 103(a) as being unpatentable over Ellozy.

Applicants incorporate by reference herein the remarks from their previous Amendment dated September 30, 2003. While Applicants still believe that the claims of the present invention, in their form prior to the present Amendment, are patentably distinct over Ellozy alone and in combination with the other cited references, Applicants have nonetheless amended independent claims 1, 19 and 20 to further clarify the subject matter of the invention so as to expedite the application to issuance. Entry of the present amendments is respectfully requested.

Regarding the rejection of independent claims 1, 19 and 20 under 35 U.S.C. § 102(b) based on Ellozy, Applicants respectfully assert that Ellozy fails to teach or suggest all of the limitations in said amended claims, for at least the reasons presented below.

It is well-established law that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Applicants assert that the rejection based on Ellozy does not meet this basic legal requirement, as will be explained below.

The present invention, for example, as recited in amended independent claim 1, is directed toward a method of processing audio-based data associated with a particular language. The method

comprises the steps of: (i) storing the audio-based data; (ii) generating a textual representation of the audio-based data, the textual representation being in the form of one or more semantic units corresponding to the audio-based data, wherein a semantic unit comprises a minimal unit of language having a semantic meaning; and (iii) indexing the one or more semantic units and storing the one or more indexed semantic units for use in searching the stored audio-based data in response to a user query (underlining added for emphasis).

Again, as pointed out in Applicants' background section (e.g., pages 1 and 2 of the present specification), Ellozy is a word-based indexing system and in such word-based indexing systems, before the searching can be started, a vocabulary and a language model based on known words must be prepared. Thus, by definition, there are always words that are unknown to the system. Unfortunately, the searching mechanism can only work with words resulting in a good language model score, i.e., known words. Also, for most of the Asian languages, including, e.g., Chinese, Japanese, Korean, Thai, and Vietnamese, word boundaries neither exist in printed form, nor in computer text files. Thus, word-based indexing and searching methods can not be applied to these languages. Thus, the invention proposes an indexing and searching approach that is not word-based but rather is semantic unit-based, as is recited in the claims.

As stated in the present specification at page 2, lines 15-21, semantic units are defined as small, preferably the smallest, units of a language that are known to have semantic meaning. Examples of semantic units that may be used are syllables or morphemes. Independent claims 1, 19 and 20 have now been amended to expressly recite that a semantic unit comprises a minimal unit of language having a semantic meaning in a sincere effort to further distinguish the semantic unit-based techniques of the claimed invention from the word-based techniques of Ellozy.

Ellozy does not disclose indexing or searching based on semantic units, wherein a semantic unit comprises a minimal unit of language having a semantic meaning, as expressly recited in the claimed invention. Indexing and searching in Ellozy is clearly based on words only, e.g., see steps 740 and 750 of FIG. 7 ("storing index words," "comparing index and recognized words"). This is also made abundantly clear at column 7, lines 13-20 ("indexing is done . . . by choosing key words or phrases").

Applicants again point out that the fact that the present specification states (page 2, lines 22-25) that a morpheme is a semantic unit, and that a morpheme may be a part of a word, or a word, such as the three units in the word "friendliness," that is "friend-" (free morpheme), "li-," and "ness" (bound morphemes), does not mean that semantic unit-based indexing, as in the invention, is not patentable distinguishable over word-based indexing, as in Ellozy. This is because a "morpheme" encompasses more than a word, i.e., encompasses syllables, groups of syllables, consonants attached to syllables, etc. (see page 3, lines 1 and 2, of the present specification). Also, in the given example, "friend" is functioning as a semantic unit of the word "friendliness" and not specifically as the word "friend."

The final Office Action states that "given the broadest interpretation of the claims, Ellozy word based indexing reads on semantic unit." While Applicants do not agree with such a contention, they have nonetheless amended independent claims to further clarify the phrase "semantic unit."

Also, the statement in the final Office Action at page 2 regarding "phonetic based indexing" is not clear since phonetic based indexing relates to acoustic phones and not to semantic units in accordance with the claimed invention.

For at least the above reasons, Applicants respectfully assert that independent claims 1, 19 and 20 are patentable over Ellozy. Also, not only due to their dependence on claim 1, but also because such claims recite patentable subject matter in their own right, Applicants respectfully assert that dependent claims 5-7 and 15 are patentable over Ellozy. Withdrawal of the §102(b) rejection is therefore respectfully requested.

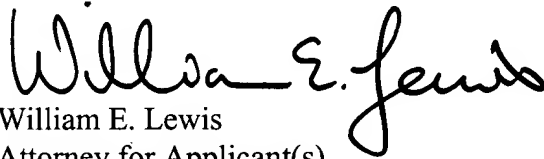
Regarding the rejection of claims 2-4, 8-14, 16-18 and 21-29 under 35 U.S.C. §103(a) based on Ellozy alone and in combination with the background section, Nanjo and Orsolini, Applicants respectfully assert that such rejections are deficient for at least the reasons given above with respect to independent claim 1. Further, Nanjo and Orsolini fail to remedy the deficiencies. Also, despite the assertion to the contrary of the Office Action, Applicants do not use the terms "morpheme" or "syllable" anywhere in the background section. Further, it is again asserted that the use of Ellozy alone in a §103(a) rejection is not only deficient for the reasons given above, but the rejection is conclusory and unsupported by any evidence of record.

Also, specifically regarding claims 21-29, Applicants find no rationale in the final Office Action for rejecting such claims other than a summary statement at page 7 that the claims are "the same scope and content as claims 1-19." This is an insufficient rejection if for no other reason that the claims contain subject matter that further limits the content of independent claim 1. However, the final Office Action does not specifically address this subject matter.

Withdrawal of the §103(a) rejection is therefore respectfully requested.

In view of the above, Applicants believe that claims 1-29 are in condition for allowance, and respectfully request favorable reconsideration.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "William E. Lewis", is written over the typed name.

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